

WHAT IS CLAIMED IS:

1. An optical element characterized by being disposed in a container having an inside ambience independent from an outside of the container, and by
5 rinsed by irradiation with ultraviolet rays from a light source outside the container.

2. An optical element according to Claim 1, wherein the container has no seal member containing
10 an organic substance.

3. An optical element according to Claim 1 or 2, wherein irradiation of the ultraviolet rays is carried out while the container is filled with a gas
15 containing oxygen.

4. An optical element according to Claim 3, wherein irradiation of the ultraviolet rays is carried out while a casing accommodating the light source and
20 the container is filled with an inactive gas such as nitrogen.

5. An optical element according to any one of Claims 1 - 3, wherein said optical element is made of
25 at least one of fluorite and quartz being usable in a wavelength region of 200 nm or less.

6. An optical element according to any one of
Claims 1 - 5, wherein the ultraviolet rays contain
light of a wavelength of 300 nm or less.

5 7. An optical element according to Claim 6,
wherein the ultraviolet light is emitted from a
low-pressure Hg lamp.

8. An optical system characterized by
10 including at least one optical element as recited in
Claim 7.

9. An exposure apparatus characterized by
including an optical system as recited in Claim 8.

15

10. A rinsing system, characterized by:
a first container;

a light emitting unit disposed inside said
first container, for emitting ultraviolet rays; and

20

a second container disposed inside said
first container and arranged so that said light
emitting unit is outside said second container, said
second container being adapted to accommodate therein
an article to be rinsed and also to enable irradiation
25 of the article with ultraviolet rays from said light
emitting unit, said second container further being
adapted to maintain an ambience different from that

of said first container.

11. A rinsing system according to Claim 10,
wherein the article is a light transmission type
5 optical element.

12. A rinsing system according to Claim 10,
wherein the article is made of one of quartz and
fluorite and wherein the article is an optical element
10 adapted to be used in a wavelength region of 200 nm
or shorter.

13. A container for a rinsing system,
characterized by:
15 a casing for accommodating therein an
article to be rinsed, said casing being adapted to
maintain an ambience different from an outside
ambience; and
a glass window mounted on said casing, for
20 enabling irradiation of the article with ultraviolet
rays from the outside.

14. A container according to Claim 13, wherein
the article is a light transmission type optical
25 element.

15. A container according to Claim 13, wherein

the article is made of one of quartz and fluorite and wherein the article is an optical element adapted to be used in a wavelength region of 200 nm or less.

5 16. A rinsing method, characterized by:

 a first step for accommodating an article, to be rinsed, into a second container disposed inside a first container and being adapted to maintain an ambience different from that of the first container;

10 a second step for introducing a rinsing gas into the second container; and

 a third step for irradiating the article with ultraviolet rays from a light source disposed inside the first container but outside the second
15 container.

 17. An exposure apparatus having an optical element rinsed in accordance with a rinsing method as recited in Claim 16.

20

 18. An apparatus according to Claim 17, wherein the optical element is adapted to be used in a wavelength region of 200 nm or less.

25 19. A device manufacturing method, characterized by:

 a first step for exposing a photosensitive

member with a device pattern by use of an exposure apparatus as recited in Claim 17 or 18; and

a second step for developing the exposed photosensitive member.

5

20. A method of producing an optical element, characterized by:

a first step for preparing an optical element; and

10

a second step for cleaning the prepared optical element in accordance with a rinsing method as recited in Claim 16.